

WHAT IS CLAIMED IS:

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- 1 Electro-optical apparatus comprising,
2 lens apparatus,
3 a CCD image sensor having a predetermined filter pattern of color-sensitive pixels,
4 and a spectrally dispersive element between said lens apparatus and said CCD.
- 1 2. Electro-optical apparatus in accordance with claim 1 wherein said filter pattern is a
2 Bayer filter pattern.
- 1 3. Electro-optical apparatus in accordance with claim 1 wherein said filter pattern is a
2 tri-stripe filter pattern.
- 1 4. Electro-optical apparatus in accordance with claim 2 wherein color-sensitive pixels
2 are arranged in contiguous groups with each group having at least a red pixel and a blue pixel
3 and said spectrally dispersive element and said lens apparatus are constructed and arranged to
4 focus a line image of an optical point upon a line of a group with the red end of the line
5 within the red pixel of a group and the blue end of the line within the blue pixel of the group.
- 1 5. Electro-optical apparatus in accordance with claim 4 wherein each group comprises a
2 square having a red pixel adjacent to first and second green pixels adjacent to a blue pixel.
- 1 6. Electro-optical apparatus in accordance with claim 1 wherein said lens apparatus and
2 said spectrally dispersive element are constructed and arranged so that red and blue images
3 are optically shifted to coincide geometrically at a point on said CCD image sensor.
- 1 7. Electro-optical apparatus in accordance with claim 6 wherein said color-sensitive
2 pixels are arranged in groups with each group having a red pixel, a blue pixel and first and
3 second green pixels that meet in a corner and said lens apparatus and said spectrally
4 dispersive element are constructed and arranged to effectively create a new green pixel by
5 averaging the first and second green pixels to establish red, green and blue color information
6 centered on said point located substantially where said red, blue and first and second green
7 pixels meet.

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1 8. A method of optical processing including, focusing the image of an object upon a
2 photoelectric array with a spectrally dispersive element between the lens and array.

1 9. A method of optical processing in accordance with claim 8 and further including
2 optically shifting red and blue digital images of the object to coincide geometrically on the
3 array.

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